

CLAIMS

1. A PC card frame kit for housing a printed circuit board assembly (PCBA) including a printed circuit board (PCB) and a connector mounted on a back edge of the PCB, the frame kit comprising:

a frame including first and second parallel side rails and an end rail extending between first ends of the first and second side rails,

wherein the frame defines an open end located at second ends of the first and second side rails, and

wherein the first and second side rails define a longitudinal slot for slidably receiving the PCB of the PCBA.

2. The PC card frame kit according to Claim 1, wherein each of the first and second side rails defines a side portion of the longitudinal slot for receiving side edges of the PCB when the PCB is fully inserted into the frame.

3. The PC card frame kit according to Claim 1, wherein the end rail defines an end portion of the longitudinal slot for receiving a front edge of the PCB when the PCB is fully inserted into the frame.

4. The PC card frame kit according to Claim 1, wherein the frame defines an elongated first groove including portions extending along a first surface of at least one of the first and second side rails,

wherein the frame kit further comprises a first panel including a cover plate and side walls respectively extending from opposite side edges of the cover plate, and

wherein the side walls are arranged to fit within the portions of the elongated first groove when the first panel is mounted onto the frame.

5. The PC card frame kit according to Claim 4,
wherein the frame further comprises a plurality of through-holes formed in the elongated first groove,
wherein the first panel further comprises a plurality of connection fingers extending from each of the side walls, and
wherein the connection fingers are arranged such that each connection finger extends into a corresponding through-hole when the first panel is mounted onto the frame.

6. The PC card frame kit according to Claim 5, wherein each connection finger comprises an elongated member having a first end connected to a corresponding side wall, and an engagement member extending from the elongated member, wherein the engagement member is disposed to fixedly engage a portion of the frame when the first panel is mounted onto the frame and said each connection finger is inserted into a corresponding through-hole.

7. The PC card frame kit according to Claim 4,
wherein an end portion of the elongated first groove extends along an upper surface of the end rail,
wherein the first panel further comprises an end wall extending from an end edge of the cover plate, and
wherein the end wall is arranged to fit within the end portion of the first groove when the first panel is mounted onto the frame.

8. The PC card frame kit according to Claim 4, wherein the frame further defines elongated second groove including portions extending along a second surface of at least one of the first and second side rails, wherein the frame kit further comprises a second panel including a cover plate and side walls respectively extending from opposite side edges of the cover plate, and wherein the side walls are arranged to fit within the elongated second groove when the second panel is mounted onto the frame.

9. The PC card frame kit according to Claim 8, wherein the frame is formed from an electrically insulating material, and wherein the first and second panels are mounted to the frame such that the first panel is electrically isolated from the second panel.

10. The PC card frame kit according to Claim 8, wherein the first and second panels comprise connection fingers, wherein each connection finger comprises an elongated member having a first end connected to the associated side wall, and an engagement member extending from the resilient member, wherein the engagement member is disposed to fixedly engage a portion of the frame when the first and second panels are mounted onto the frame and said each connection finger is inserted into a corresponding through-hole defined in the frame.

11. The PC card frame kit according to Claim 10, further comprising a metal support having first and second side arms arranged to be received into corresponding slot portions formed in the first and second side rails of the frame, wherein the metal support includes a plurality of through-holes arranged to

engage connection fingers of the first and second panels, whereby the metal support electrically connects the first and second panels.

12. The PC card frame kit according to Claim 8, wherein the first panel comprises a male-type connection structure and the second panel comprises a female-type connection structure, and wherein the frame comprises a through-hole positioned such that the male-type connection structure extends through the through-hole and engages the female-type engagement structure when the first and second panels are mounted onto the frame.

13. The PC card frame kit according to Claim 8, wherein the first panel comprises a first self-locking connection structure and the second panel comprises a second self-locking connection structure, and wherein the frame comprises a through-hole positioned such that at least one of the first and second connection structures extends through the through-hole when the first and second panels are mounted onto the frame, and wherein the first and second self-locking structures are constructed to self-engage when the first and second panels are mounted onto the frame.

14. A PC card comprising:

a printed circuit board assembly (PCBA) including a printed circuit board (PCB) having a front edge and a back edge, and a connector mounted onto the back edge of the PCB;

a frame including first and second parallel side rails and an end rail extending between first ends of the first and second side rails,

wherein the frame defines an open end located at second ends of the first and second side rails,

wherein the first and second side rails define a longitudinal slot, and

wherein the PCBA is mounted in the frame such that the connector abuts the open end of the frame, and the PCB extends through the open end of the frame into the longitudinal slot.

15. The PC card according to Claim 14,

wherein the first side rail defines a first slot portion of the longitudinal slot,

wherein the second side rail defines a second slot portion of the longitudinal slot, and

wherein side edges of the PCB are engaged in the first and second slot portions.

16. The PC card according to Claim 14, wherein the end rail defines an end portion of the longitudinal slot, and wherein a front edge of the PCB is engaged in the end portion.

17. The PC card according to Claim 14,

wherein the frame defines an elongated first groove including portions extending along a first surface of at least one of the first and second side rails,

wherein the PC card further comprises a first panel including a cover plate and side walls respectively extending from opposite side edges of the cover plate, and

wherein the side walls are engaged within the portions of the elongated first groove.

18. The PC card according to Claim 17,

wherein the frame further comprises a plurality of through-holes formed in the elongated first groove,

wherein the first panel further comprises a plurality of connection fingers extending from each of the side walls such that each connection finger extends into a corresponding through-hole.

19. The PC card according to Claim 18, wherein each connection finger comprises an elongated member having a first end connected to a corresponding side wall, and an engagement member extending from the elongated member and fixedly engaged to a portion of the frame.

20. The PC card according to Claim 17,
wherein an end portion of the elongated first groove extends along an upper surface of the end rail,
wherein the first panel further comprises an end wall extending from an end edge of the cover plate and received in the end portion of the first groove.

21. The PC card according to Claim 17,
wherein the frame further defines elongated second groove including portions extending along a second surface of at least one of the first and second side rails,
wherein the PC card further comprises a second panel including a cover plate and side walls respectively extending from opposite side edges of the cover plate, and
wherein the side walls are received into the elongated second groove of the frame.

22. The PC card according to Claim 21, wherein the frame is formed from an electrically insulating material, and wherein the first and second panels are mounted to the frame such that the first panel is electrically isolated from the second panel.

23. The PC card according to Claim 22, wherein the connector of the PCBA includes a first grounding contact disposed to contact the first panel, and a second grounding contact disposed to contact the second panel.

24. The PC card according to Claim 23, wherein the first grounding contact is connected to a first pin located in the connector, and the second grounding contact is connected to a second pin located in the connector.

25. The PC card according to Claim 21, wherein the first and second panels comprise connection fingers, wherein each connection finger comprises an elongated member having a first end connected to the associated side wall, and an engagement member extending from the resilient member, wherein the engagement member is fixedly engaged to the frame.

26. The PC card according to Claim 25, further comprising a metal support having first and second side arms arranged to be received into corresponding slot portions formed in the first and second side rails of the frame, wherein the metal support includes a plurality of through-holes engaged with connection fingers of the first and second panels, whereby the metal support electrically connects the first and second panels.

27. The PC card according to Claim 21, wherein the first panel comprises a male-type connection structure and the second panel comprises a female-type connection structure, and wherein the frame comprises a through-hole positioned such that the male-type connection structure extends through the through-hole and engages the female-type connection structure.

28. The PC card according to Claim 21, wherein the first panel comprises a first self-locking connection structure and the second panel comprises a second self-locking connection structure, and wherein the frame comprises a through-hole positioned such that at least one of the first and second connection structures extends through the through-hole, and wherein the first and second self-locking structures are constructed to self-engage when the first and second panels are mounted onto the frame.

29. A method for producing a PC card, the PC card comprising a printed circuit board assembly (PCBA) and a frame, wherein the PCBA includes a printed circuit board (PCB) having a front edge and a back edge and a connector mounted onto the back edge of the PCB, and wherein the frame includes first and second parallel side rails and an end rail extending between first ends of the first and second side rails, wherein the frame defines an open end located at second ends of the first and second side rails, and wherein the first and second side rails define a longitudinal slot,

wherein the method comprises:

inserting the front edge of the PCB into the open end of the frame; and

sliding the PCBA relative to the frame such that the PCB slides along the longitudinal slot.

30. The method of Claim 29, further comprising securing first and second panels onto the frame after the PCBA is inserted into the frame.